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National Priority Chemicals Trends Report (2000-2004)

Section 6
Trends Analyses for Specific Industry Sectors

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Section 6
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Introduction

This is the first time we have included in this Report a section looking at the generation and management of PCs by facilities within a specific Standard Industrial Classification (SIC) code, or industry sector. In addition to showing national, Regional, and state generation trends, we also present basic information regarding the industry sector.

The sector which we have analyzed is SIC 3312 (Blast furnaces (including coke ovens) and steel mills). We chose this sector because it accounted for a significant portion of the total quantity of PCs in 2004 and offers potential waste minimization opportunities.

Future Sector Analyses

We plan to analyze additional sectors in subsequent editions of this Report. Ultimately, we would like to include the sectors that account for at least 80 percent of the total quantity of PCs that are generated. We also plan to discuss potential waste minimization opportunities for PCs within each of the sectors.

Beginning with the 2006 TRI reporting year, facilities must report NAICS code rather than the SIC code that TRI has used since reporting began in 1987.

Exhibit 6.1 shows the relationship between the NAICS and SIC categories associated with the transformation of raw materials into iron and steel value added products. For the purposes of this Report, we focus on the steel works involving blast furnaces and EAFs as reported under NAICS code 331111 (SIC 3312) and comprise operational activities known collectively as the iron and steel industry.

We also are working to develop a methodology to extract Hazardous Waste Biennial Report (BR) data applicable to PCs in hazardous waste streams. We plan to include this information in future sector analyses.

Exhibit 6.1 Typical NAICS and SIC Associated with the Iron and Steel Industry:

NAICS	SIC	Description
331111	3312	Steel works, blast furnaces (including coke ovens), rolling mills
331112	3313	Electrometallurgical products, except steel
331222	3315	Steel wiredrawing and steel nails and spikes
331221	3316	Cold-rolled steel sheet, strip, and bars
331210	3317	Steel pipe and tubes

Source: For an expansive list see: www.cnesus.gov/epcd/naics02/ def/ NDEF331.HTM

Industry Sector Information for SIC 3312 (Blast furnaces and steel mills)

Industry Overview[12]

The SIC 3312 sector encompasses facilities that manufacture steel and form it into basic shapes and forms that can be used to create steel products. This sector is divided into two basic types, with each type representing approximately half of domestic production:

- Integrated steel mills which use a three-step process to produce steel from iron ore, coke (made from coal by cokemaking), and limestone; ironmaking (using a blast furnace), and Basic Oxygen Furnace (BOF) technology.
- "Mini-mills" which produce steel from scrap metal using Electric Arc Furnace (EAF) technology, without operations for coking or ironmaking.

A fully integrated steel mill involves cokemaking, ironmaking, steelmaking, and the subsequent steel forming and finishing operations. Coke serves as a fuel and carbon source and is produced by heating coal in the absence of oxygen at high temperatures in coke ovens. Pig iron is then produced by heating the coke, iron ore, and limestone in a blast furnace. In the BOF, high-purity oxygen is injected along with molten pig iron from the blast furnace and flux. Approximately 20 to 35 percent of the "charge" to the furnace is scrap steel.[13]

Alternatively, in mini-mills using EAFs, the input material is scrap steel, both purchased scrap and home scrap from the facility; in many cases is 100 percent of the charge[14], which is melted by passing an electric current from electrodes through the scrap.

Exhibit 6.2 shows the process flows for both integrated- and mini-mills. For a more detailed discussion of these industry processes, operations, and environmental impacts, see the list of suggested references in the Waste Minimization Opportunities discussion in this Section.

Industry Demographics

According to DOE,[15] there has been considerable consolidation in the industry over the last few decades. As of 2002, 90 companies were producing raw steel at almost 140 locations. The absolute number of integrated mills producing steel in BOFs has always been relatively small and is currently at around 20. Most (approximately 80%) of U.S. steelmaking capacity is located at mills concentrated in the Great Lakes region, primarily in Indiana, Illinois, Ohio, Pennsylvania, Michigan, and New York.

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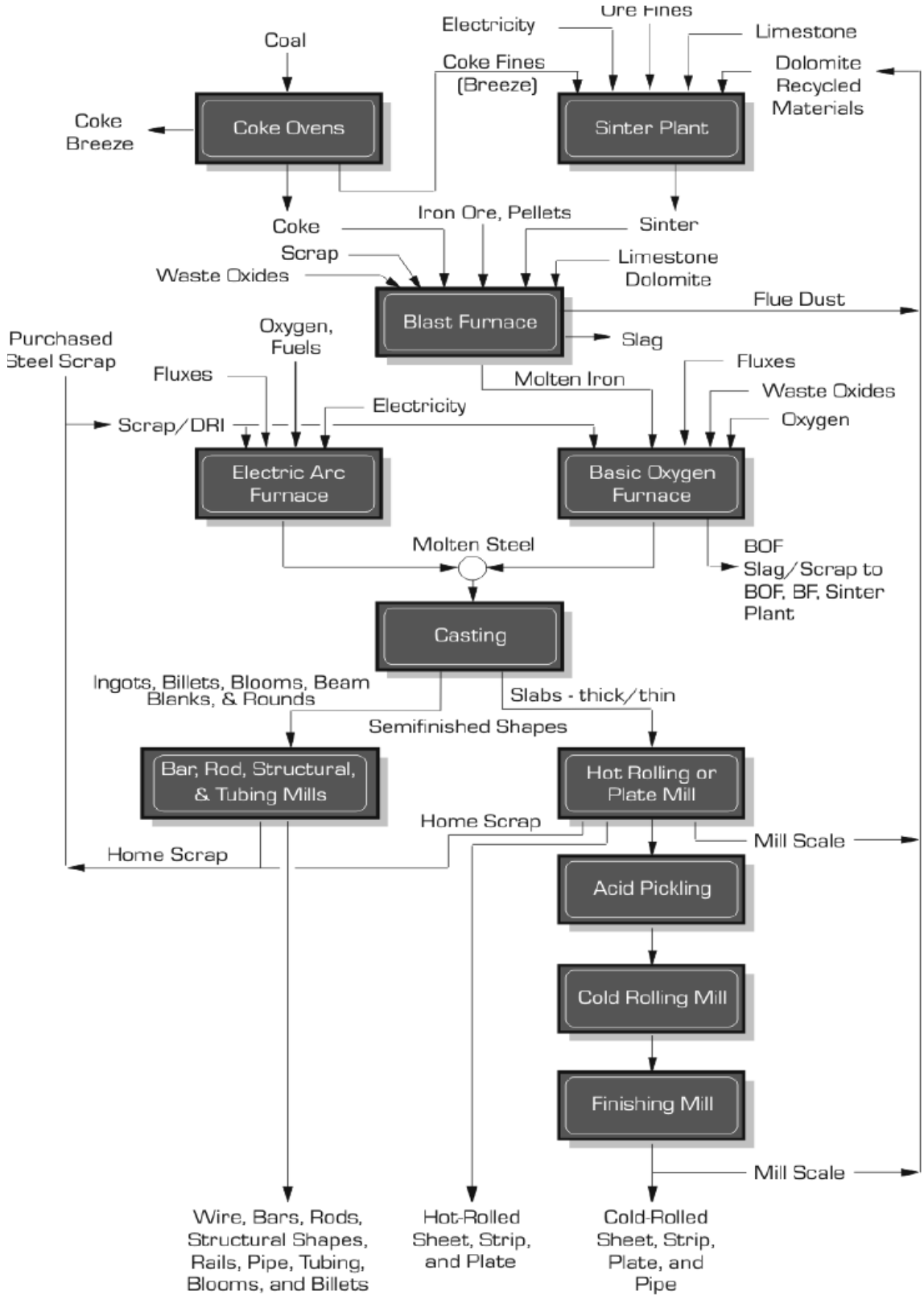
[12] For more information, see: See US EPA Sector Strategies Performance Report, 2006, www.epa.gov/sectors/performance.html; see also Profile of the Iron and Steel Industry, US EPA, 1995, www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/iron.html; see also US DOE, Steel Industry Technology Roadmap, 2001, www.eere.energy.gov/industry/steel/roadmap.html; see also US DOE, Steel Industry Profile, www.eere.energy.gov/industry/steel/profile.html.

[13] US DOE, *Energy and Environment Profile of the US Iron and Steel Industry*, August 2000, and *Integrated Pollution Prevention and Control (IPPC) , Best Available Techniques Reference Document on the Production of Iron and Ste*el, European Commission, December 2001.

[14] *Integrated Pollution Prevention and Control (IPPC) , Best Available Techniques Reference Document on the Production of Iron and Steel*, European Commission, December 2001.

[15] See U.S. DOE's : (1) Steel industry profile: http://www.eere.energy.gov/industry/steel/profile.html, and (2) *Steel Industry of The Future, FY 2004 Annual Report*, February 2005.

Exhibit 6.2. Iron and Steel Process Flow[16]



[16] American Iron and Steel Institute, *Steel Industry Technology Road Map*, December 2001 http://www.steel.org/ AM/Template.cfm?Section=PDFs6&TEMPLATE=/CM/ ContentDisplay.cfm&CONTENTID=4800.

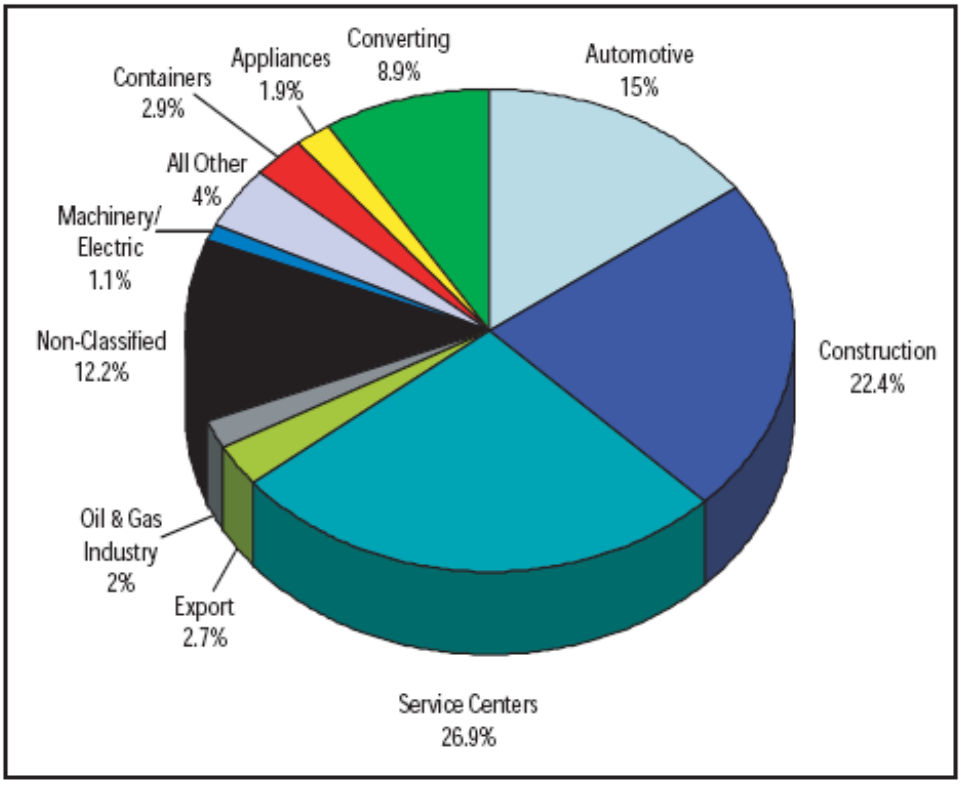
Industry Products Characterization

Steel is an alloy of iron that contains varying amounts of carbon, as well as other elements, such as nickel and chromium. The iron and steel industry produces semi-finished steel shapes, such as bars, sheets, and strips, as well as finished products such as wires, rods, and pipes.

The U.S. steel industry is vital to both economic competitiveness and national security. Steel is the backbone of bridges, skyscrapers, railroads, automobiles, and appliances. More than 3,000 catalogue grades of steel are available, not including custom grades for specific users. Most grades of steel in use today, particularly high-strength steels that are light and versatile, were not available ten years ago.

The U.S. steel industry is a $50 + billion enterprise and additional downstream processing pushes the value of steel shipments closer to $75 billion. The U.S. produced 103 million net tons of raw steel in 2003, nearly 10 percent of the total world steel production of 1.06 billion net tons. Exhibit 6.3 shows the steel industry's market distribution.

Exhibit 6.3. Steel Shipments by Market Classification (2003)[17]



[17] Note: The term "Converting" refers to the processing of steel into a more finished state, such as pipe, tubing, and cold-rolled strip – before selling it to end users. The term "Service Centers" refers to an operation that buys steel, often processes it in some way and then sells it in a slightly different form.

Source: U.S. DOE, *Steel Industry of The Future, FY 2004 Annual Report*, February 2005.

Industry Environmental Effects [18]

The iron and steel sector affects several environmental media, including air emissions, wastewater contaminants, hazardous and solid wastes. The most significant environmental effects from integrated steel mills result from coking and ironmaking activities which generate pollutants, including PACs, benzene, and "toxic" metals. These organic and metal pollutants are associated with a number of RCRA listed and some characteristic wastes. U.S. steelmakers are researching, both independently and with various federal and international programs, new technologies to reduce the environmental impacts of steelmaking, such as to decrease their reliance on coke or to make steel using far less energy.[19]

As an industry, mini-mills are the largest U.S. consumers of recycled steel scrap, but they also face issues related to contaminants in scrap products such as lead, cadmium, mercury, polychlorinated biphenyls (PCBs) and other "toxics." We provide below the quantities of PCs in wastes that facilities in the SIC 3312 industry sector reported to TRI.

Facilities in SIC 3312 Generating Priority Chemicals

In 2004, 95 facilities in SIC 3312 reported to TRI about 9.9 million pounds of PCs (Exhibit 6.4). This was about 12 percent of the total quantity of PCs reported by all industry sectors. In 2001, the number of facilities increased. In part, this increase may have been due to the decrease in the TRI reporting threshold for lead and lead compounds that became effective for the 2001 TRI reporting year. Since 2001, the number of facilities has remained relatively stable.

Since the quantity of PCs generated is to a large extent influenced by production levels, the decreased quantity of PCs in 2001-2003 may have been due to increased steel imports and the recession of 2001. Facilities reporting increased quantities of PCs in 2003-2004 likely reflect an economic recovery.

Exhibit 6.4. National-Level Information for SIC 3312 (2000-2004)

	2000	2001	2002	2003	2004	Change in Quantity (2000-2004)	Percent Change (2000-2004)
Number of Facilities	79	91	89	92	95	-	20.3%
Priority Chemical Quantity* (pounds)	9,628,162	7,944,838	7,195,567	8,226,018	9,915,357	287,194	3.0%

* Priority Chemical quantity refers to the quantity of PCs that were managed via disposal, energy recovery, or treatment. Quantities of PCs recycled are presented separately.

Facilities in this industry sector reported 11 PCs from 2000-2004 (Exhibit 6.5). Lead and lead compounds accounted for the overwhelming quantity of PCs, including about 94 percent of the total quantity of PCs reported by facilities in this industry sector in 2004.

[18] U.S. EPA, *Profile of the Iron and Steel Industry*, September 1995 and U.S. DOE, *Energy and Environmental Profile of the U.S. Iron and Steel Industry*, August 2000 (DOE/EE-0229).For more information, see: 1)US EPA Sector Strategies Performance Report, 2006, www.epa.gov/sectors/performance.html; 2)Profile of the Iron and Steel Industry, US EPA, 1995, www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/iron.html; 3)US DOE, Steel Industry Technology Roadmap, 2001, www.eere.energy.gov/industry/steel/roadmap.html; 4)US DOE, Steel Industry Profile, www.eere.energy.gov/industry/steel/profile.html.

[19] See [DOE OIT page on research projects], and www.steel.org/AM/Template.cfm?Section=R_and_D&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=35&ContentID=8210.

Exhibit 6.5. Priority Chemicals reported by facilities in SIC 3312 (2004)

Priority Chemical	2000 (pounds)	2001 (pounds)	2002 (pounds)	2003 (pounds)	2004 (pounds)	Percent of Total PC Quantity (2004)
Anthracene	339	117	354	7,866	5,128	0.05%
Benzo(g,h,i)perylene	506	444	118	33,711	17,229	0.17%
Cadmium and cadmium compounds	93,398	62,922	38,355	58,469	31,212	0.31%
Dibenzofuran	158	32	212	2,834	2,624	0.03%
Dioxins	<1	<1	<1	<1	<1	0.00%
Lead and Lead compounds	9,428,975	7,766,719	7,098,315	7,726,717	9,361,873	94.42%
Mercury and mercury compounds	22,720	4,216	3,279	8,020	11,273	0.11%
Naphthalene	53,243	81,765	33,554	73,997	273,506	2.76%
Phenanthrene	3,452	3,165	2,023	29,682	19,418	0.20%
Polychlorinated Biphenyls	4,443	3,495	4,773	5,497	3,121	0.03%
Polycyclic aromatic compounds	20,928	21,963	14,585	279,226	189,972	1.92%
Total	**9,628,162**	**7,944,838**	**7,195,567**	**8,226,018**	**9,915,357**	**100.0%**

Of the 95 facilities in SIC 3312 that reported PCs in 2004, 28 reported 92 percent of the total quantity of PCs for this industry sector (Exhibit 6.6).

Exhibit 6.6. Distribution of Facilities in SIC 3312 that Reported Priority Chemicals (2004)

Breakdown of total PC quantity (9,915,357 pounds) reported by SIC 3312 facilities		
Quantity Reported	**Number of Facilities Reporting this quantity (2004)**	**Percent of Total Quantity of PCs (2004)**
up to 10 pounds	12	less than 0.1%
between 11 - 100 pounds	11	less than 0.1%
between 101 -1,000 pounds	7	less than 0.1%
between 1,001 - 10,000 pounds	22	1.0%
between 10,001 - 100,000 pounds	15	6.5%
between 100,001 - 1 million pounds	28	92.4%
> 1 million pounds	0	0.0%

Eighty-four facilities in SIC 3312 reported about 9.4 million pounds of lead and lead compounds in 2004. Twenty-six reported more than 100,000 pounds of this PC and accounted for about 93 percent of its total quantity. (Exhibit 6.7).

Exhibit 6.7. Distribution of Facilities in SIC 3312 for each Priority Chemical (2004)

Breakdown of each PC quantity reported by SIC 3312 facilities			
Priority Chemical (pounds and number of reporting facilities in 2004)	**Quantity Reported in 2004**	**Number of Facilities Reporting this quantity (2004)**	**Percent of Total Quantity of this PC (2004)**
Anthracene (5,128 pounds from 3 facilities)	up to 10 pounds	1	0.1%
	between 11 - 100 pounds	0	0.0%
	between 101 -1,000 pounds	1	7.4%
	between 1,001 - 10,000 pounds	1	92.4%
Benzo(g,h,i)perylene (17,229 pounds from 4 facilities)	up to 10 pounds	1	less than 0.1%
	between 11 - 100 pounds	2	0.7%
	between 101 -1,000 pounds	1	99.3%

Exhibit 6.7. Distribution of Facilities in SIC 3312 for each Priority Chemical (2004)

Breakdown of each PC quantity reported by SIC 3312 facilities			
Priority Chemical (pounds and number of reporting facilities in 2004)	**Quantity Reported in 2004**	**Number of Facilities Reporting this quantity (2004)**	**Percent of Total Quantity of this PC (2004)**
Cadmium and cadmium compounds (31,212 pounds from 7 facilities)	up to 10 pounds	1	less than 0.1%
	between 11 - 100 pounds	0	0.0%
	between 101 -1,000 pounds	1	1.5%
	between 1,001 - 10,000 pounds	4	53.6%
	between 10,001 - 100,000 pounds	1	44.9%
Dibenzofuran (2,624 pounds from 2 facilities)	up to 10 pounds	0	0.0%
	between 11 - 100 pounds	0	0.0%
	between 101 -1,000 pounds	1	8.7%
	between 1,001 - 10,000 pounds	1	91.3%
Dioxins (<0.1 pounds from 5 facilities)	up to 10 pounds	5	100.0%
Lead and Lead compounds (9,361,873 pounds from 84 facilities)	up to 10 pounds	11	less than 0.1%
	between 11 - 100 pounds	12	less than 0.1%
	between 101 -1,000 pounds	4	less than 0.1%
	between 1,001 - 10,000 pounds	16	0.7%
	between 10,001 - 100,000 pounds	15	6.6%
	between 100,001 - 1 million pounds	26	92.6%
Mercury and mercury compounds (11,273 pounds from 52 facilities)	up to 10 pounds	25	0.6%
	between 11 - 100 pounds	18	6.0%
	between 101 -1,000 pounds	6	15.1%
	between 1,001 - 10,000 pounds	3	78.3%
Naphthalene (273,506 pounds from 11 facilities)	up to 10 pounds	0	0.0%
	between 11 - 100 pounds	1	less than 0.1%
	between 101 -1,000 pounds	3	0.7%
	between 1,001 - 10,000 pounds	5	7.9%
	between 10,001 - 100,000 pounds	1	12.7%
	between 100,001 - 1 million pounds	1	78.7%
Phenanthrene (19,418 pounds from 4 facilities)	up to 10 pounds	0	0.0%
	between 11 - 100 pounds	1	0.1%
	between 101 -1,000 pounds	2	6.2%
	between 1,001 - 10,000 pounds	1	93.7%
Polychlorinated Biphenyls (3,121 pounds from 3 facilities)	up to 10 pounds	0	0.0%
	between 11 - 100 pounds	1	0.3%
	between 101 -1,000 pounds	0	0.0%
	between 1,001 - 10,000 pounds	2	99.7%
Polycyclic aromatic compounds (189,972 pounds from 6 facilities)	up to 10 pounds	0	0.0%
	between 11 - 100 pounds	1	less than 0.1%
	between 101 -1,000 pounds	1	0.4%
	between 1,001 - 10,000 pounds	2	1.7%
	between 10,001 - 100,000 pounds	1	25.8%
	between 100,001 - 1 million pounds	1	72.1%

In 2004, SIC 3312 facilities that reported PCs were located in 27 states within nine EPA Regions. Facilities in EPA Regions 4 and 5 accounted for about 53 percent of the total quantity of PCs for this industry sector. In Indiana and Alabama, facilities reported more than one million pounds of PCs (Exhibit 6.8).

Exhibit 6.8. Priority Chemicals Quantities reported by SIC 3312 facilities, by EPA Region and State (2004)

EPA Region	State	Number of Facilities	Total Priority Chemical Quantity	Percent of Total PC Qty for SIC 3312
2	New York	5	11,942	0.1%
Region 2 Totals		**5**	**11,942**	**0.1%**
3	Pennsylvania	19	545,955	5.5%
	Virginia	2	346,971	3.5%
	Delaware	1	110	0.0%
	West Virginia	1	89	0.0%
Region 3 Totals		**23**	**893,125**	**9.0%**
4	Alabama	9	1,308,284	13.2%
	Florida	1	<1	0.0%
	Georgia	1	<1	0.0%
	North Carolina	2	514,965	5.2%
	South Carolina	3	172,859	1.7%
	Tennessee	3	91,043	0.9%
	Kentucky	3	47,125	0.5%
	Mississippi	1	39,826	0.4%
Region 4 Totals		**23**	**2,174,102**	**21.9%**
5	Indiana	5	1,405,081	14.2%
	Illinois	3	658,375	6.6%
	Ohio	11	584,174	5.9%
	Michigan	4	338,128	3.4%
	Wisconsin	1	47,843	0.5%
	Minnesota	1	8	0.0%
Region 5 Totals		**25**	**3,033,609**	**30.6%**
6	Texas	4	517,793	5.2%
	Arkansas	4	405,776	4.1%
	Louisiana	1	194,352	2.0%
Region 6 Totals		**9**	**1,117,922**	**11.3%**
7	Iowa	2	835,536	8.4%
	Nebraska	1	629,570	6.3%
Region 7 Totals		**3**	**1,465,106**	**14.8%**
8	Utah	1	691,506	7.0%
	Colorado	1	159,144	1.6%
	Wyoming	1	12	0.0%
Region 8 Totals		**3**	**850,661**	**8.6%**
9	California	2	20,144	0.2%
Region 9 Totals		**2**	**20,144**	**0.2%**
10	Oregon	2	348,744	3.5%
Region 10 Totals		**2**	**348,744**	**3.5%**
Grand Totals		**95**	**9,915,357**	**100.0%**

Management of Priority Chemicals by facilities in SIC 3312

Lead was the primary PC reported by SIC 3312 facilities and accounted for most of the approximately 97 percent of the PC quantity that was land disposed. The 310,000 pounds of naphthalene that two Pennsylvania facilities sent to treatment accounted for the most significant non-disposed PC quantity.

From 2000-2004, the recycled quantity of PCs was approximately 60 percent more than the PC quantity, i.e., the quantity that was managed via land disposal, energy recovery, or treatment (Exhibit 6.9). SIC 3312 facilities in most of the states reported significant recycling of PCs in 2004 (Exhibit 6.10).

Exhibit 6.9. Method of Priority Chemicals Management by SIC 3312 facilities (2004)

	2000	2001	2002	2003	2004	Percent Change (2000-2004)	Management Method -- Percent of Total PC Quantity in 2004
Priority Chemical Quantity* (pounds)	9,628,162	7,944,838	7,195,567	8,226,018	9,915,357	3.0%	-
Disposal Quantity (pounds)	9,350,187	7,802,451	7,151,385	8,145,596	9,582,481	2.5%	96.6%
Energy Recovery Quantity (pounds)	25,557	25,310	25,280	25,348	16,904	-33.9%	0.2%
Treatment Quantity (pounds)	252,418	117,077	18,902	55,074	315,972	25.2%	3.2%
Recycling Quantity (pounds)**	11,828,005	11,696,956	10,689,216	13,352,779	15,567,708	31.6%	-

*Priority Chemical quantity refers to the quantity of PCs that were managed via disposal, energy recovery, or treatment. Quantities of PCs recycled are presented separately.

** Waste minimization is the emphasis of this Report. As such, we primarily focus on quantities of PCs that are managed via onsite/offsite disposal, treatment, or energy recovery because we believe these PC quantities offer the greatest opportunities for waste minimization. Since recycled quantities of PCs are already directed to their best uses, they are considered separate and distinct from the quantities of PCs not recycled. Throughout this section, the recycled quantity is presented for the purpose of providing some perspective regarding the quantity of this PC already recycled compared to the quantities that are managed via disposal, treatment, and energy recovery and thus potentially available for waste minimization

Exhibit 6.10. SIC 3312 Facilities' Management of Priority Chemicals, by EPA Region and State 2004

EPA Region	State	Quantity of Priority Chemicals (2004)	Percent of Total Quantity of Priority Chemicals (2004)	Disposal (pounds)		Energy Recovery (pounds)		Treatment (pounds)		Recycling (pounds)	
				Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2	New York	11,942	0.1%	0	5,740	6,202	0	0	0	13,752	412,807
Region 2 Totals		**11,942**	**0.1%**	**0**	**5,740**	**6,202**	**0**	**0**	**0**	**13,752**	**412,807**
3	Pennsylvania	545,955	5.5%	3,697	221,972	9,342	0	264,840	46,105	960,851	1,380,008
	Virginia	346,971	3.5%	0	346,971	0	0	0	0	0	560,800
	Delaware	110	0.0%	33	77	0	0	0	0	0	354,091
	West Virginia	89	0.0%	0	89	0	0	0	0	0	95,105
Region 3 Totals		**893,125**	**9.0%**	**3,730**	**569,109**	**9,342**	**0**	**264,840**	**46,105**	**960,851**	**2,390,004**
4	Alabama	1,308,284	13.2%	66,569	1,235,328	1,360	0	5,027	0	176,494	1,350,152
	North Carolina	514,965	5.2%	0	514,965	0	0	0	0	0	518,160
	South Carolina	172,859	1.7%	0	172,859	0	0	0	0	0	1,727,842
	Tennessee	91,043	0.9%	66,172	24,871	0	0	0	0	0	700,897
	Kentucky	47,125	0.5%	592	46,533	0	0	0	0	0	302,538
	Mississippi	39,826	0.4%	0	39,826	0	0	0	0	42,974	293,759
	Florida	<1	0.0%	0	0	0	0	0	<1	0	0
	Georgia	<1	0.0%	0	0	0	0	0	<1	0	0
Region 4 Totals		**2,174,102**	**21.9%**	**133,333**	**2,034,382**	**1,360**	**0**	**5,027**	**0**	**219,467**	**4,893,348**
5	Indiana	1,405,081	14.2%	0	1,405,081	0	0	0	0	0	19,182
	Illinois	658,375	6.6%	46,050	612,325	0	0	0	0	0	0
	Ohio	584,174	5.9%	0	584,174	0	0	0	0	50,589	1,008,608
	Michigan	338,128	3.4%	0	338,128	0	0	0	0	53,424	179,004
	Wisconsin	47,843	0.5%	0	47,843	0	0	0	0	0	0
	Minnesota	8	0.0%	0	8	0	0	0	0	129	304,758
Region 5 Totals		**3,033,609**	**30.6%**	**46,050**	**2,987,559**	**0**	**0**	**0**	**0**	**104,142**	**1,511,552**
6	Texas	517,793	5.2%	3	517,790	0	0	0	0	0	1,815,735
	Arkansas	405,776	4.1%	0	405,776	0	0	0	0	44,123	1,771,754
	Louisiana	194,352	2.0%	0	194,352	0	0	0	0	0	291,905
Region 6 Totals		**1,117,922**	**11.3%**	**3**	**1,117,919**	**0**	**0**	**0**	**0**	**44,123**	**3,879,394**
7	Iowa	835,536	8.4%	0	835,536	0	0	0	0	209	158,919
	Nebraska	629,570	6.3%	0	629,570	0	0	0	0	0	0
Region 7 Totals		**1,465,106**	**14.8%**	**0**	**1,465,106**	**0**	**0**	**0**	**0**	**209**	**158,919**
8	Utah	691,506	7.0%	1	691,505	0	0	0	0	0	1
	Colorado	159,144	1.6%	240	158,904	0	0	0	0	0	480,032
	Wyoming	12	0.0%	0	12	0	0	0	0	0	0
Region 8 Totals		**850,661**	**8.6%**	**241**	**850,421**	**0**	**0**	**0**	**0**	**0**	**480,033**
9	California	20,144	0.2%	0	20,144	0	0	0	0	0	499,108
Region 9 Totals		**20,144**	**0.2%**	**0**	**20,144**	**0**	**0**	**0**	**0**	**0**	**499,108**
10	Oregon	348,744	3.5%	0	348,744	0	0	0	0	0	0
Region 10 Totals		**348,744**	**3.5%**	**0**	**348,744**	**0**	**0**	**0**	**0**	**0**	**0**

Approximately 97 percent of the non-recycled PCs that SIC 3312 facilities reported was land disposed in 2004, mostly offsite. SIC 3312 facilities used land disposal for all or some of eight of the PC quantity of 11 PCs (Exhibit 6.11). SIC 3312 facilities treated the majority of the dibenzofuran, dioxins, and PACs. Most of the recycling reported by facilities in this industry was for lead.

Exhibit 6.11. Management of Priority Chemicals by SIC 3312 facilities, By Priority Chemical (2004)

Priority Chemical	Total Quantity *(pounds) in 2004	Percent of Total PC Quantity for SIC 3312 (2004)	Number of SIC 3312 Facilities that reported this PC (2004)	Onsite Disposal (pounds)	Offsite Disposal (pounds)	Onsite Energy Recovery (pounds)	Offsite Energy Recovery (pounds)	Onsite Treatment (pounds)	Offsite Treatment (pounds)	Onsite Recycling (pounds)	Offsite Recycling (pounds)
Anthracene	5,128	0.05%	3	0	3,323	0	0	1	1,804	170	9,700
Benzo(g,h,i)perylene	17,229	0.17%	4	0	17,227	0	0	0	2	6,676	7,700
Cadmium and cadmium compounds	31,212	0.31%	7	13,659	17,553	0	0	0	0	672	72,083
Dibenzofuran	2,624	0.03%	2	0	469	0	0	55	2,100	120	0
Dioxins	<1	0.00%	5	0	<1	0	0	<1	<1	0	0
Lead and lead compounds	9,361,873	94.42%	84	167,698	9,194,176	0	0	0	0	312,584	13,993,144
Mercury and mercury compounds	11,273	0.11%	52	78	11,195	0	0	0	0	75	1,537
Naphthalene	273,506	2.76%	11	0	4,580	16,904	0	218,672	33,350	806,305	50,000
Phenanthrene	19,418	0.20%	4	0	10,585	0	0	21	8,812	25,540	33,000
Polychlorinated Biphenyls (PCBs)	3,121	0.03%	3	1,922	1,199	0	0	0	0	0	0
Polycyclic aromatic compounds (PACs)	189,972	1.92%	6	0	138,817	0	0	51,118	37	190,403	58,000
Totals	**9,915,357**	**100.00%**	**181**	**183,356**	**9,399,124**	**16,904**	**0**	**269,867**	**46,105**	**1,342,544**	**14,225,164**

*Total quantity refers to the quantity of PCs that were managed via disposal, energy recovery, or treatment. Quantities of PCs recycled are presented separately.
We primarily focus on quantities of PCs that are managed via onsite/offsite disposal, treatment, or energy recovery because we believe these PC quantities offer the greatest opportunities for waste minimization. Since recycled quantities of PCs are already directed to their best uses, they are considered separate and distinct from the quantities of PCs not recycled. Throughout this section, the recycled quantity is presented for the purpose of providing some perspective regarding the quantity of this PC already recycled compared to the quantities that are managed via disposal, treatment, and energy recovery and thus potentially available for waste minimization.

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